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Technology takes the spotlight

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Abstract (Article Summary)

With more than 400 exhibiting companies, this year's Bobbin Americas was host to many new product introductions and technology debuts. From e-commerce innovations to CAD systems to efficient automation, suppliers were focused on streamlining the apparel supply chain as well as developing business-to-business and business-to-consumer. The latest offerings from those companies are presented.

Full Text (5755 words)

With more than 400 exhibiting companies, this year's Bobbin Americas was host to many new product introductions and technology debuts. From e-commerce innovations to CAD systems to efficient automation, suppliers were focused on streamlining the apparel supply chain as well as developing business-to-business (B2B) and business-to-consumer (B2C) tools.

An estimated 8,500 (based on unaudited attendance figures) sewn products executives attended the event, which took place Sept. 13-15 at the Georgia World Congress Center in Atlanta, GA. On site, attendees found a wide range of equipment, software solutions, services and supplies from the industry's leading vendors. This third installment of Bobbin's post-show coverage* provides a closer look at some of their latest offerings by company. In addition, see the "New Product Showcase" on page 56 for more on warehousing and distribution developments, some of which premiered at Bobbin Americas.

Software and Systems:

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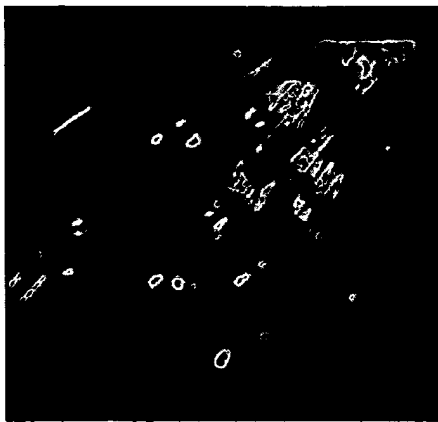
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[Photograph]

From Information Technology to E-Commerce

Ai Applied Intranet Technologies

unveiled AiFashionStudio(TM), a comprehensive suite of six tools for collaborative product management processes. The packages are hot linked directly as online applications, which allows data to be shared seamlessly and ensures design integrity within the suite.

Additionally, Ai introduced AiFabric, a collaborative Web-based solution to manage the fabric development and approval process among supply chain trading partners. Capabilities of the system, which is a commercial release of a prototype created for Levi Strauss & Co., include: specification viewing access for trading partners; tools for creating and managing fabric standards, tests and conformance audits; viewing and catalog features for fabric archives; and a multilevel search engine based on fabric type, construction and standards. In addition, the system can track fabric versions, edits, changes and issues by time, date and user stamp, as well as report statistical analysis including fabric finishes by merchandising data, group and season.

Apparel Business Systems introduced Ez-Business, a new Web-enabled suite with four modules: Ez-Store, an electronic storefront; Ez-Mart, a B2B application that facilitates sales to retailers; Ez-Contractor, a supply chain management package; and Ez-Rep, sales force automation software.

ASAP of Georgia Inc. re-released the Classic version of its AS/AP- Apparel Accounting System. This version is designed to provide small-sized manufacturers and distributors with the ability to affordably implement a full-scale system. The software includes functions for: general ledger and classical accounting; sales order processing and allocation; customer service; finished goods and raw material inventory control; timephased production control and scheduling; bill of materials and trim sheets; material requirements planning; cut order scheduling; and screenprinting and embroidery processing, among other things. In addition, ASAP announced the third release of its Visual AS/AP^sup TM^ Apparel Accounting System. This version features a multifunction toolbar, which permits users to simultaneously open all Visual forms. This capability allows users to enter orders, add customers and check accounts without accessing menus.

Assyst-Ballmer InC. announced automarker.com, a new Web-based service for automatic marker making. Hosted on one of the largest commercial "Webfarms," the service guarantees security, scalability and bandwidth. The first in a series of Web-based e-commerce solutions planned by the CAD/CAM firm, automarker.com is designed to offer sewn products companies immediate availability of marking resources to cover peak demands or to manage other resource shortages, without investment in equipment, software and associated operating costs. The next upgrade of the site will provide users with the option to generate control files to drive various plotters and computerized cutters. These files will reside in customer-owned mailboxes at the site.

Computer Generated Solutions displayed its ACS Optima Millennium Version Release 2 (MVR2), which has been updated to include 80 new functions. According to Murray Shostak, manager of ACS Optima product engineering, enhancements were made across the system's entire suite of modules, including the addition of a new Customer Mass Maintenance system that allows users to simultaneously update shared information fields across "ship to" records. Additionally, ACS Optima is now available through an application service provider (ASP), which allows companies to access and use the software through the Internet without purchasing or maintaining the package.

eSASA Corp. entered into a strategic alliance with Ecom Textile Inc. whereby the two firms will provide direct links to each other's 13213 sites, www.eSASA.com and www.ecomtextile.com. eSASA is a multilingual e-marketplace serving five industries, including the textile industry, which it offers more than 1,500 textile machinery assets with a market value of more than $50 million. Its visitors are manufacturers of textile fibers, fabrics and sewn products. Ecom Textile is an online marketplace designed to enable transactions among different participants in the textiles, apparel, machinery and sewn products (TAMS) industries. When Ecom Textile visitors select its machinery option, they will be seamlessly transferred to the textile equipment section of eSASA.com.

Emens International Inc. released the Essentus Vision Suite(TM), which includes two solutions, Fashion Vision(TM) and Footwear Vision(TM), geared to the apparel industry and the footwear industry, respectively. Vision Suite is a Web-enabled group of products designed to handle capabilities in the areas of retail management, production, customer service, workflow and business intelligence. The suite, which utilizes Oracle's latest database technology, Oracle 8i, can be accessed by users over a standard Web browser.
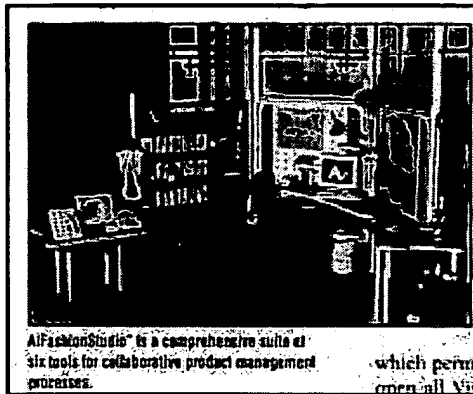
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AiFashionStudio' is a comprehensive suite of six tools for collaborative product management processes.
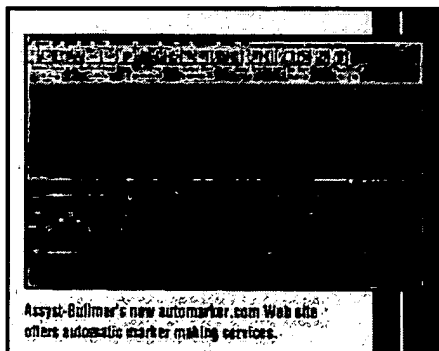
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Assyst-Bulmer's new automarker.com Web site offers automatic marker making services.

New Oracle workflow tools have been incorporated into the suite, allowing for action notice delivery, purchase authorizations and notification of credit exceptions in the production and customer service modules. The retail management module allows for the identification of receiving exceptions and for alerting stores of potential out-of-stock conditions. Essentus expects to set its pricing for the suite on a named-user basis or through an application rental model.

In addition to releasing the new suite, Essentus demonstrated features of fashionchain.com, its online B2B site for the apparel industry. Among other functions, the site allows apparel manufacturers' customers to enter and track orders online, and enables apparel firm executives to remotely access real-time information on sales, inventory or other data via portable computing devices. No software must be purchased to use fashionchain.com, which can be integrated with other software systems.

Garmentrade demonstrated its e-commerce solution for product development and fabric and trim sourcing. Like some other product data management (PDM) packages, the system has several functions that address the front-end of the product development process, including features for tracking the different stages of design conceptualization and approval and tools for managing seasonal line calendars. Beyond that, Garmentrade offers CAD functionality, such as the ability to create

virtual concept boards.

In terms of B2B functions, the firm's Web site, www.garmentrade.com, allows users to search and order fabrics and trims from a network of online vendors. Specifically for apparel manufacturers and designers, the site also features creative concept boards for designing and organizing seasonal apparel lines and tools for developing fabric and trim themes. For fabric mills and trim suppliers, the platform offers visual concept boards for developing and merchandising product lines, lead generation, order tracking and management tools. And for mill representatives, www.garmentrade.com offers multiple line management, lead generation, contact management, order tracking and management tools.

The site provides for effective collaboration and trading efficiency, explained John Calvert, president, adding that "Garmentrade offers Web-enabled solutions that will enable [improved] time to market. ... Our focus is on supply chain management."

Garpac Corp. showcased the G/4 Enterprise Supply Chain Management software system, a multitier client/server package. The architecture of the system offers database and platform independence and easy equipment scalability, while offering system users the familiarity of the Windows operating system. G/4's relational database allows users to centralize and structure data, and reduce data redundancy. Changes to data can be easily targeted, and made effective system-wide. In terms of supply chain management functionality, Garpac demonstrated the G/4 system's ability to continuously perform supply chain matching between customer orders and production from the point of order entry; and its capabilities for data and/or process centralization.
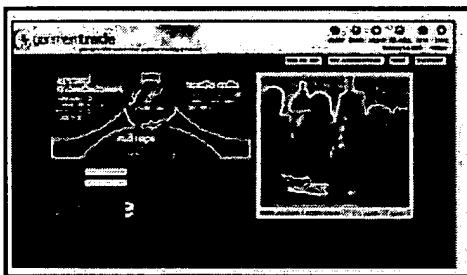
[Photograph]
Garmentrade's new e-commerce solution is designed to streamline the product development and fabric and trims sourcing processes.

GM Computers Inc. introduced A2000(R), a scalable chent/server application exclusively for the apparel industry. The system was developed in Oracle(R), said Carene Wallace, vice president, who noted that GCS is

GM Computes Inc. introduced moo-, a scalable client/server application exclusively for the apparel industry. The system was developed in Oracle(R), said Carene Wallace, vice president, who noted that GCS is in the process of moving the system to Oracle 8i. A2000 features an open architecture, which enables it to work with many off-the-shelf applications; a fully integrated EDI module; and customized screens, reports and tables. Other modules include purchase order processing; vendor invoice processing; cutting tickets; production tracking; and order processing, including order entry, routing, picking, billing, invoicing and factoring.

Geac Enterprise Solutions unveiled its new GeacStyle end-to-end business process suite, which includes the DesignTime, QuestPDM, SELLIT CRM and StorePlanner products. Available as stand-alone applications or fully integrated with the company's System2I Style modules, GeacStyle offers: management of the creative design process; comprehensive product data management facilities; planning features for production, material requirements and distribution; purchase control and tracking capabilities; manufacturing, subcontracting and work-inprocess control; stock management capabilities; customer service and relationship management functions; and retail store planning and visualization tools.

Toronto, Canada-based Geac, which purchased JBA International and its System2I Style suite last September, now has more than 400 apparel customers worldwide. According to president Harry Debes, the company has 90 offices in 16 countries and is focusing on meeting the needs of global companies through an integrated core of products. "Point solutions are very popular right now," he added, "so we're offering both end-to-end and modular solutions."

Gerber Technology Inc. modeled a small apron "factory" at Bobbin Americas to demonstrate the company's mass customization solutions, which include the AccuMark grading and marking systems, numerically controlled GERBERcutters and GERBERmover unit production systems. Attendees participating in the display were able to choose a color and initial

monogramming (including font) for the aprons, which were delivered to their home doorsteps within a few days. Among the companies using the Gerber mass customization system in production include Coppley Apparel Group, a made-to-measure suit producer; Morning Pride, which supplies protective firefighter suits; and Signature Products, a manufacturer of custom seating and accessories for the boating industry.

Hirsch International Corp. introduced the Passport Business Manager, a software system for managing and controlling all aspects of an embroidery operation, including production planning, order/job tracking, design management, inventory control and accounting. The system, which is compatible with QuickBooks, also can be used to organize design libraries with userdefined categorization and search technology that allows users to retrieve designs in seconds. Additional color combinations for a design can be easily created using a design variation feature, and the results can be stored with the design for repeat use.

In the area of production planning, the Passport Business Manager can be used to designate the best embroidery machine for a particular job based on information such as thread set on the machine; hoops required; number of pieces; and the unit's production capabilities. Start time and estimated end time also can be displayed, and production reports can be generated for each machine or staff group. The order/job tracking function constantly updates the status of every order, providing accurate information throughout the production process, from artwork creation to digitizing to sampling to customer approval and order completion. It also has the capability to automatically generate pricing for different customer groups, order types and sizes.

Intentia demonstrated its latest e-business applications, including the e-Customer Relationship Management (CRM), e-Partner Relationship Management (PRM) and e-Employee Relationship Management (ERM) components. Intentia bases its e-business framework and components on two platforms, IBM's WebSphere and the Microsoft Site Server Commerce Edition, which together share the majority of the e-business server market, Intentia reported.

The CRM component includes functions for online sales of goods and services and analysis of customer behavior on Web sites. The CRM application includes the Movex Web Shop B2C and Movex Web Shop B2B component groups for fulfilling B2C Internet trade and handling the functional requirements of B2B online trading. These groups enable the user to set up online product catalogs, search engines and shopping carts as well as to secure payments, track orders and invoice customers. The PRM component uses extensible markup language (XML) to allow for exchanging of data between internal and external systems, streamlining B2B purchasing and, in turn, reducing inventories. The ERM component enables internal employees and extranet trading partners to visit their own personalized Web pages on a company's browser-based internal portal. With different levels of access, they can reach corporate software applications, e-mail, line calendars, chat sites, etc.

Ioline premiered its Ioline Pattern system for pattern design, digitizing, grading and marking. A long-time supplier of plotting and applique machines, Ioline partnered with an outside software developer to create its first CAD offering in response to demand from customers, chairman and CEO Frank Schimicci told Bobbin. The line Pattern system is available in Macintosh and PC versions, supports the import or export of AAMA/ANSI-292 standard pattern data and can connect to non-standard RS-232 plotters, such as those from Lectra and Gerber. The software features an image library and the ability to automatically open pleats, create or shift darts and annotate patterns. Schimicci emphasized that Ioline focused on ease of use in its development of the software. "People in this industry are not generally technical people. They're creative people," he concluded. "They don't want to spend time becoming technocrats."

Investronica Sistemas released a number of enhancements as part of its new Invesmark Futura suite of programs. The suite is built on a Windows 32-bit platform, which allows Investronica to offer more advanced CAD/CAM solutions that function at higher speeds and are more scaleable than previous programs. The platform also offers new elements for user interfaces, and better capacity for integration with corporate networks, applications and peripheral equipment, such as plotters, scanners, etc. Among the new offerings are 3-D design and virtual garment simulation capabilities (See "Information Technology Trends Drive Dramatic Industry Change," Bobbin, August 2000, for more on these products.) The suite's updated Pattern Generation System offers new functions for speeding up the industrialization of new patterns and for exchanging pattern data using HPGL and IGES technology.

In the made-to-measure arena, the new suite incorporates a module that enhances the process of receiving orders for made-tomeasure clothing from different retail sales locations, and processing those orders to specific client requirements. Investronica's made-to-measure package can accommodate measurements taken manually or downloaded from body scanners, including the Telmat, Tecmath and Wicks and Wilson scanners.

In the marking and cutting area, Investronica's Easycut program uses new algorithms to identify and cut common lines in

different patterns, and to control and optimize the movement of cutting machines. New algorithms also have been incorporated into the firm's Marker Generation System, its Matching System for cutting checked and patterned fabrics and its BOW system for cutting uneven fabrics. Investronica also has released an Automatic Marker Server, offering unattended operation of the firm's Automatic Marker module, which automatically identifies the best nesting strategies from existing markers and applies them to similar markers. In addition, through its Invescut 2000 project, the firm has added on-the-fly cutting and remote control capabilities for its automated cutters.

Justwin Technologies announced new outsourced hosting arrangements for its core eProcess solution for supply chain management. By becoming an application service provider (ASP), Justwin will host the software on its servers, allowing customers to focus more resources on the critical components of their businesses rather than on maintaining the software. Earlier in 2000, Justwin announced the availability of Justwin Connect, a "light" version of its product data management software that is also offered via an ASP arrangement, and geared to small- and mediumsized apparel firms.

Lectra SysteMS has entered into an exclusive worldwide strategic partnership with Datacolor International, whereby the two companies will jointly develop and market integrated CAD and color management solutions for the apparel and fashion-related industries. Focusing on the supply chain from design to manufacturing to merchandising to e-commerce, the new venture will create an integrated color value chain using True Color In, True Color Out- technology. The system will allow designers to accurately communicate color specifications and samples electronically, reducing product development time and improving color quality. For example, design colors can be carried forward electronically into online merchandising tools to present virtual apparel and other merchandise in true color on the Internet.

Macpherson Meistergram will introduce the Delta Monogram Control System (Delta MCS), a program for large-volume monogramming that is offered through the firm's distribution partnership with VeriStitch Inc. The Delta MCS program offers: automatic monogram job creation by combining personalization from order entry with monogram templates; single bar code swipe or number entry to automatically download the matching job with correct personalization for the item to be monogrammed; and automatic production tracking of monogram jobs with dynamically updated status display.

Magic Software Enterprises demonstrated the Magic eFactory- real-time shop floor data collection system, which collects, tracks and reports shop floor activities and automates the preparation of bundle tickets. The system also records off-standard work, records operators' time and attendance at their workstations, tracks repairs, records seconds, reports details of mechanics' time spent on machine repairs, measures employee output and performance against standards and tracks and computes payroll information. The Magic eFactory program runs on a standard Windows graphical user interface.

Methods Workshop has developed Quick TruCostm(C), a new lowcost software package for fast product costing during the design process. Explaining the system, Bob Craig, vice president of operations, told Bobbin: "We are using proven time values measured by techniques that trace their lineage back to MTM [Methods Time Measurement]. We have been developing this system for approximately 10 years, and it can accurately cost the labor for a complete garment in 20 to 40 minutes."

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[Photograph]
This workstation is equipped with Investronica's Invesmark Futura suite. With 32-bit processing capability, the suite has enabled Investronica to enhance its offerings in pattern making, marker making and cutting.

Accurate to within plus or minus 10 percent, Quick TruCost is based on 16 factors that determine how much time it takes to produce a garment. In operation, costing can be completed with input for only eight of the 16 parameters. Among these are: inches of sewing by stitch type; number of parts; number of buttons/buttonholes and other trim items; number of seams; and garment type (shirt, pant, etc.). Other inputs, which are optional at the user level, include material cost, trim cost and overhead/labor extras.

By inserting data into fields within the system, a costing analyst can access database files of proprietary time values that are maintained by Methods Workshop. Quick TruCost then calculates the required time values and costs based on regional/national labor costs per hour, material costs and other factors. Training for the system takes two to four days and

includes: basic counting/measuring techniques, data input techniques and an overview of the system's print, store and transfer functions.

ModeZone.com presented its online fashion mart, which is designed to allow retailers, vendors and suppliers to conduct business via the Internet. Among the mart's offerings are: 24-hour virtual showrooms where ModeZone members can host and view fashion collections; the ability to process purchase orders online; customized market research, order management, credit checking, logistics and factor referral services; a Sample and Swatch Selection option for ordering and receiving swatches directly from fabric vendors; and a Fashion Community section for interacting with other ModeZone members, posting and reviewing classified ads and accessing industry information on trade shows, news, etc.

New Generation Computing demonstrated new sourcing capabilities of its Collaborative Factory Management and Sourcing (CFMS) system. The system, which is designed to standardize procedures and transactions between apparel firms and their global sourcing networks, now offers enhanced capability for specification downloading, as well as picking and packing (including bar code labeling and advance ship notice preparation). Contractors can access the system via standard Internet browsers. In terms of other e-commerce functionality, the new CFMS package offers functions for requesting online quotes for business, and accepting bids. The system also enables companies to create a database of factory profiles, including information about different factories' skills sets, production capacity, etc., for use as background in selecting contractors for jobs.

Alan Brooks, president of New Generation Computing, emphasized that the system encompasses a "practical set of proven applications." In addition to the new sourcing capabilities, CFMS includes all of the functionality of New Generation Computing's real-time shop-floor control system, and production tracking system. Goods can be tracked through various routes, such as from the sewing room to the laundry, and users can be notified as the goods pass any number of pre-determined critical milestones, he noted.

PAD System Technologies highlighted its new PAD System 4.0 software with a "cloning" tool that automatically updates related pattern pieces when a change is made to a master piece. For example, if a pant waist circumference is altered, the waistband will automatically reflect the new dimensions. (See "Pattern, Marker Making Program Update," Bobbin, September 2000, for more on this product.)

RVL unveiled an e-commerce intranet site that has been under development for the past two years, and represents a multimilliondollar investment by the company. The site is designed to enable RVL and its customers to digitally share labeling and product identification data globally, including images, text and specifications. The site also allows manufacturers, retailers and their contractors to order and purchase labels and supplies, and monitor their shipments and inventories in conjunction with RVL. The site serves as a conduit for RVUs major retail and branded apparel customers to share new labeling requirements with their global vendor bases, and for international contractors to order and download the necessary materials and data.

Robert Loop, director of marketing for RVL, explained that customers' images can be stored in the intranet's relational database, which can in turn generate Web pages of the images for viewing, revising and implementing by pre-designated parties. "We manage over 350,000 graphic items each one custom - for more than 2,500 clients," Loop noted.

The intranet site, which has been beta tested by several major retailers, has gone live for RVUs Los Angeles, CA, and Hong Kong offices and customers, and is in the process of being rolled out globally. RVL, which has 25 U.S. and 17 international offices, also is in the process of partnering with some of the industry's B2B portals by creating links from the portals to its intranet system.

Scanvec Garment Systems (SGS) showcased a new virtual try-on software from Browzwear, an Israel-based firm formed just more than one year ago as a spin-off of a 3-D educational software firm. Browzwear offers C-Me software, which is designed to be downloaded by consumers for 3-D virtual try-on of garments while shopping for apparel online. Consumers enter their measurements into the program, and create an "Avatar," or personalized image, that can be used for trying on garments. Consumers' measurements reside on their PC hard drives, along with the C-Me software.

On the apparel firm's end, the C-Me software takes pattern files and fabric data directly from the apparel firm's CAD systems (whether from SGS or other vendors), and adapts the information for 3-D visualization by the consumer, simulating the try-on process as the pattern is draped across the consumer's Avatar. Browzwear worked in conjunction with Intel to develop a 3-D engine that produces 3-D renderings that can be quickly viewed and downloaded on a typical household PC, explained Rami Sokolower, general manager of Browzwear USA. The firm has developed mathematical algorithms to simulate fabric drape and garment fit.
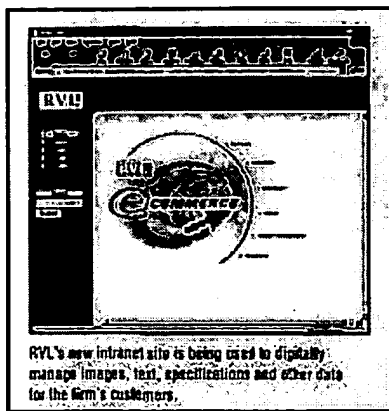
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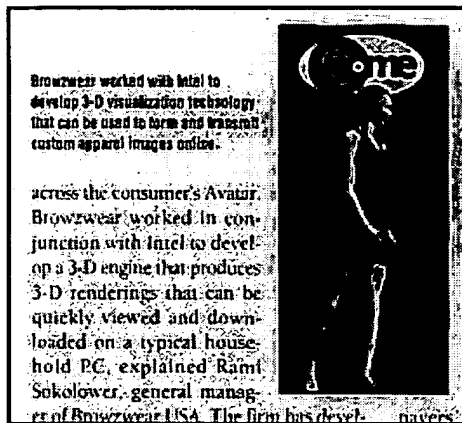
[Photograph]
Browzwear worked with Intel to develop 3-D visualization technology that can be used to form and transmit custom apparel images online.

Beyond its C-Me virtual try-on capabilities, Browzwear offers the Virtual Stitcher (V-Stitcher) program for customization and modification of 2-D patterns in a 3-D environment. The program initially is designed to allow B2B collaboration between designers and product development teams within different apparel firms, but eventually will be used to allow consumers to customize garment styles online. In the latter case, SGS' Modulate made-to-measure program would be used to convey the custom pattern data from the Web to the production factory.

textrade.com demonstrated its new online trading and information resource for the global textile commodities industry. The site is divided into two main sections - a textile trading exchange and a news and information forum. The trading platform is a secure online venue for buying and selling fiber, yarn and greige goods from around the world. It also features direct one-to-one real-time negotiation, which allows members to selectively and privately post offers and inquiries, explained Monte Platt, vice president of information services and editor in chief. The textrade news center offers insights into developments in the textile industry, including feature articles and weekly analysis columns.

UPS Capital Corp., the financial services subsidiary of United Parcel Service of America Inc. (UPS), showcased a full range of e-commerce financial services, including an electronic bill presentment and payment (EBPP) solution. The latter offers a fully integrated system for linking the delivery of goods with the information and funds associated with those goods. EBPP focuses on the high-volume needs of B2B transactions. For example, it allows manufacturers of sewn products and their suppliers to track the status of invoices sent to buyers and better forecast when payments will be received. In addition, EBPP allows payers to schedule payments based on their own cash flows; expedites processing through online dispute resolution, electronic credits and automated pay scheduling; confirms delivery of goods via an automatic tracking feature linked to UPS; and accurately transmits electronic payment of goods into companies' legacy accounts payable systems.

Innovative Advances Span the Supply Chain

Ac/Automated Components International demonstrated the XL75SS creaser, a single-head machine for creasing small parts, such as pockets. The machine is available with or without steam, is made in the United States and has a oneyear

warranty.

Aquatex Industries Inc. featured the latest version of Hydroweave(TM)-, a performance enhancing fabric that provides extreme protection against high-heat environments by cooling the wearer through evaporation.

Hydroweave(TM), which is now licensed exclusively by 3M Personal Safety Products, is composed of three layers. An absorbent batting made from a combination of hydrophilic fibers (fibers that attract water) and hydrophobic fibers (fibers that reject water) is sandwiched between a breathable outer shell fabric and a thermally conductive inner lining. To activate a garment made with Hydroweave(TM), the user soaks it in water for five minutes, charging the hydrophilic fibers with moisture and activating the cooling process. When moisture in the batting evaporates, heat is removed, cooling the surrounding area and, subsequently, the wearer.

The fabric is ideal for uniforms and apparel for occupations such as firefighting. For example, pooled perspiration on the body can reach extremely high temperatures when exposed to fire and scald firefighters. Hydroweave(TM) wicks water away ft-om the body so that there is no "puddling," and moisture can evaporate quickly, which reduces the possibility of scalding.

Avery Dennison unveiled the S-262 printer for carton- and package-labeling operations at distribution centers, warehouses and manufacturing sites. The S-262 can print labels at speeds of up to 6 inches per second, and offers a 32-bit microprocessor and 4-inch-plus print head. Using thermal transfer print technology, the machine can print 1-D and 2-D bar codes, complex graphics and human-readable copy at print resolutions of 203 dpi. Avery Dennison also introduced a new label cutter/stacker that can be used in conjunction with a variety of machines, as well as its new InfoChain Express(TM) (ICE) Internet program for online management of product identification information (see "New Product Showcase," Bobbin, October 2000, for more on ICE.)

Barudan America Inc. released an updated version of its interactive training CD-ROM, "The Interactive Embroidery Instructor," a step-by-step training guide for setting up and using the Barudan Elite single-head embroidery machine. The firm also introduced the new B2000 single-head machine, which can embroider at speeds of up to 2,000 stitches per minute. The B2000 has a builtin in monogramming system, as well as a group duplication function, which is designed for stitching names on emblems. In addition, Barudan has begun offering free embroidery designs via its Web site at www.bar-udan.com.

Creative Tueskoes Corp., which manufactures equipment for the production of soft window treatments, showed the new Multi, an automatic sheet cutting machine for fabrics up to 130 inches wide. The unit also is ideal for single-ply cutting of curtains and draperies. In addition, the company highlighted the Econo compact fabric inspection machine, which features drop-in "barless" front loading, and the JR panel-cutting machine, which has inspection, measuring, rewinding, slitting and cutting capabilities. "We offer a wide variety of heavy-duty machines, including inspection, re-rolling and measuring machines," said Irmi Tueskoes, executive vice president. All machines can be equipped with a simple mechanical measuring device or with MeasurTronic, an advanced microprocessor-controlled measuring system that can generate bar code labels and operate in conjunction with a laser scanner.

Maersk Sealand has added a new weekly service to its line, said Kenneth Kisatsky, market analyst of apparel imports. North Central America II will service the ports of New Orleans, LA.; Puerto Cortez, Honduras; and Santo Tomas, Guatemala, arriving and departing at each destination on Sunday, Wednesday and Thursday, respectively.

Paw Corp. launched its Paxar Passport program, through which Paxar offers free reconditioning, packing, shipping and installation of Paxar equipment that is being transitioned from the United States to Latin American sites. The offer, which has a value of between $2,300 and $4,000 depending on the age of the equipment and the shipping destination, is available to customers who agree to purchase supplies (such as ribbons, etc.) from Paxar for one year. Free training of local equipment operators also is provided as part of the Passport program.

Bruce Lessard, vice president of worldwide marketing, explained that Paxar has seen significant growth in the Caribbean and Central American (C-CAM) market as well as in Mexico, and wanted to help customers move their equipment into the region. For customers relocating non-Paxar or older Paxar labeling and product identification equipment to Latin America, Paxar also is offering trade-in and upgrade allowances in conjunction with local service packages.

Permaboss showed its TPM 710 semiautomatic hydraulic press with a revolving table and two workstations. The machine is multifunctional and performs operations including embossing, hot-foil stamping, transfer printing, flock-foil embossing, fusing, heat sealing, drying, laminating and the cutting Also, the machine features a screenprinting option and can be

equipped with a laser positioning device for aligning several different operations on the same garment
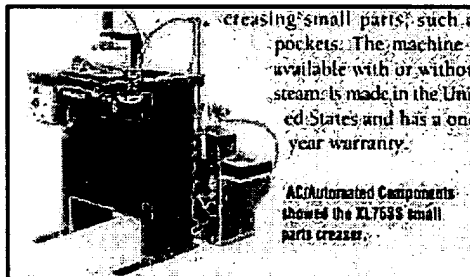
"You used to have a separate machine for each operation - one for embossing, one for screenprinting, one for fusing, etc." said Robert K. Harbauer, president. "This machine drives costs down by performing all of these operations."
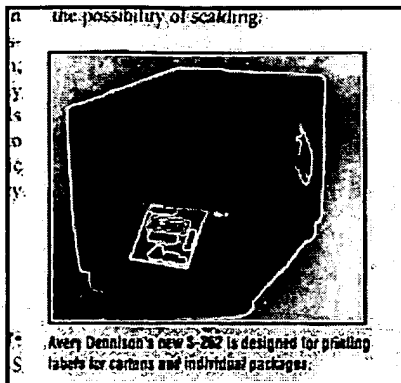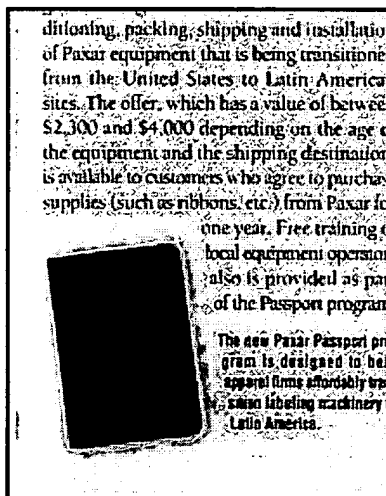
Enlarge 200%
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[Photograph]
Avery Dennison's new S-262 is designed for printing labels for cartons and individual packages.

Enlarge 200%
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[Photograph]
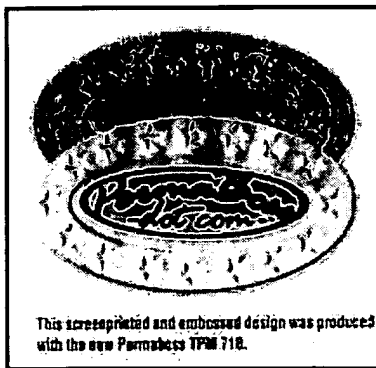AC/Automated Components showed the XL75SS small parts creaser.

Enlarge 200%
Enlarge 400%

[Photograph]
The new Paxar Passport program is designed to help apparel firms affordably transition labeling machinery to Latin America.

Enlarge 200%

Enlarge 400%

This screenprinted and embossed design was produced with the new Permaboss TPM 710.

[Photograph]
This screenprinted and embossed design was produced with the new Permaboss TPM 710.

The TPM 710 can be used on many products, including T-shirts, baseball caps and labels, and it has a production capacity of 240 pieces to 480 pieces per hour. It is Internet-compatible and has an optional high-speed remote camera system to assist technicians in assessing problems. Other special features include touch-screen digital programming; a seven-day timer; presettings for materials including PVC, leather and cotton; and automatic piece cost calculation.

Sal-Bee Machine International demonstrated the PK-600PSP Press King presentation shirt press. This machine is designed to press folded dress shirts before they are packaged. Use of the machine enables manufacturers to provide customers with a neater, more compact appearance in their packaged shirts. The unit, which was designed in the United States in conjunction with a leading dress shirt manufacturer, has a one-year warranty.

Shore To Shore announced a joint venture with New Zealand-based Saito Group, which will expand its reach into Australia and New Zealand. Saito is a diversified specialty printer, specializing in thermal, pulp and adhesive labels and hangtags. The joint venture provides a worldwide logistics solution for retailers in the two markets, and complements Shore To Shore's current global logistics platform by allowing the company to service buying offices and garment contractors on a local level in the New Zealand and Australian markets, explained Kammie Boatwright, marketing manager.

On another front, the company displayed its W.O.R.L.D. Internet ordering system, which provides direct access to a worldwide tracking system and allows companies to order and manage all of their label needs online. (See "New Product Showcase," Bobbin, October 2000, for more on W.O.R.L.D.)

Uniport Industries Corp. featured many high-end offerings for the heat seal market, from foam-backed, puffy 3-D animal and fruit appliques for children's clothing to appliques with holographic elements. Also new were appliques that include sheer materials, translucent threads, blended stitch colors and cloth layering.

These innovative products are helping to expand a market that traditionally has been dominated by pure embroidery appliques, noted Harry Anderson, vice president of marketing. Materials such as cord and beading and tiny rhinestones that are built in to the appliques also are stimulating interest, along with miniature mirrors and multidimensional designs that give an illusion of depth, he said. In the case of the latter, Anderson added, some of the designs actually are composed of two layers, such as flowers with petals that are only affixed to the applique at one point.

YKK Universal Fasteners Inc. showed its new line of buttons and fasteners covered in nickel-free finishing. "Approximately 10 percent of women are hypersensitive to nickel," explained Alan Franklin, manager of marketing and training. Because a nickel button or fastener that rubs against the skin can cause the condition known as nickeldermatitis, YKK has shifted away from using nickel in its products, he said, noting that in Europe, nickel-free fasteners are a requirement.

[Footnote]
* Part one of the Bobbin America's review, which appeared in Bobbin's October issue, focused on new digital technology introduced within the "Digital Zone," an exhibit cosponsored by the Bobbin Group and [TC]2, the Textile/Clothing Technology Corp. Developments in the Caribbean Basin Initiative (CBI) countries following the passage of the Trade and Development Act of 2000 were highlighted in Bobbin's second review installment, which appeared in the November issue.
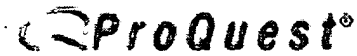
[Author Affiliation]
Bobbin editor in chief Lisa C. Rabon, senior editor Kathleen DesMarteau and senior associate editor Jordan K. Speer contributed to this report.

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Ain't nothing like the real thing

Constantine Von Hoffman. **CIO**. Framingham: Sep 1, 2000.Vol. 13, Iss. 22; pg. 96

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Abstract (Article Summary)

Real-time inventory management capability lets a company constantly track every product it sells from when it's manufactured, or when it arrives in its warehouse, to when it hits the buyer's door. Some websites have done the necessary back-end integration to be able to tell their customers the truth about whether a product is in stock. But many have had to resort to workarounds that fall far short of offering real-time information. Companies now get orders in many different ways - phone, websites, e-mail, fax or in-person at brick-and-mortar stores - making it harder to ensure that inventory information is accurate.

Full Text (2819 words)

[Headnote]
Web Architecture

[Headnote]
Customers want to know the truth about whether a product on a website is in stock. Real-time inventory is the best way to tell them.
BY CONSTANTINE VON HOFFMAN

Reader ROI

Learn why websites will need to offer real-time inventory information

Understand some of the hurdles-and the costs-companies offering realtime inventory information face

-does your website know where your inventory is? Most websites don't. And that often comes as a rude awakening to shoppers, most of whom assume that if an item is on a website, it's available for them to buy. Take Steve Katzman's too familiar tale of online-ordering woe. Katzman, CEO of Decoratetoday.com, went to the website of a very well-known brick-and-mortar retail chain to order some Calvin Klein blue jeans. He found a pair, bought them and then got an e-mail confirming that the retailer had received his order and was going to ship it to him. But five days later, just about the time he was expecting his designer jeans to arrive, Katzman got another e-mail that said, "Unfortunately, we had to cancel your order.. for one of the following three reasons..... Katzman reacted the same way any Web shopper would: "I'll never go back there again," he says.

This is just one of the thousands of horror stories that have e-businesspeople around the world chanting the mantra "real-

time inventory, real-time inventory." Real-time inventory management capability lets a company constantly track every product it sells from when it's manufactured, or when it arrives in its warehouse, to when it hits the buyer's door. The theory is that by integrating a website with a real-time inventory system, a company will never disappoint an online customer again, because its website will list only products actually in the warehouse, ready to be picked, packed and shipped (or would tell customers that something was on backorder but would be available within a certain period of time), and would reserve those products right when the customer places the order. But is real-time inventory on the Web a reality today? And is it really necessary for every Web business?

The answers to those questions are a qualified yes and yes. Some websites have done the necessary back-end integration to be able to tell their customers the truth about whether a product is in stock. But many have had to resort to workarounds that fall far short of offering real-time information. While those workarounds might be good enough for now, it is going to become increasingly important for companies to make the move to real-time in the future. Customers clearly want it: Displaying inventory availability on a website is one of the leading features that makes customers more likely to buy from or revisit an online store, according to a Jupiter Communications survey earlier this year. And companies that don't have real-time inventory capability will fall behind competitors that do, analysts say. "This capability will differentiate between those who thrive and those who don't," says Lora Cecere, research director for enterprise and supply chain management at the Gartner Group in Stamford, Conn. "When someone clicks on a website they don't want to hear 'next day.' They want to hear 'right now.'"

Right now, as in, "We'll get it out the door today." This type of immediacy is essential for Streamline.com, the Westwood, Mass.based company that delivers groceries and household services to customers' homes. The dotcom would not be able to operate without checking inventory in real-time, says John Cagno, Streamlines vice president of information technology. How does he know? Because Streamlines website didn't do that when it was first launched-and it cost the company customers.

In the past, Streamline did not check inventory until after a customer had placed an order. If it didn't have what a customer had ordered, the crew member filling that order would guess what an appropriate substitution would be-say frozen strawberries if the order had called for fresh. As with all guesses, sometimes they were right and sometimes they were wrong, but they were never what the customer had ordered. And there's "a huge ripple effect" from not being able to deliver what customers want, Cagno says. Fielding customer service complaints takes time, margins erode, and "customer retention ultimately would be hurt," he says.

Today at Streamline, when customers complete an order they are actually reserving items that are either in the company's warehouse or that a supplier has confirmed as existing and on their way to the warehouse. Streamline didn't plunge headfirst into building real-time links between the website and the inventory system. It started by rolling out SAP financials, a four-month project, then decided to deploy SAP from end-to-end, which took eight months. It uses SAP's warehouse management system, which links receiving, picking and other warehouse functions with the inventory control system, and SAP's online store module, which interfaces with order management, accounting and inventory control.

While it's clear that a company like Streamline-which deals with perishables subject to crop failures or spoilage and has customers who are used to getting their groceries on the day they order them-needs real-time inventory, do businesses that sell nonperishables need it? Definitely, says Bob Lewandowski, vice president of systems for ASAP Software, a Buffalo Grove, Ill.-based software reseller. "We're in a low-margin business, so it is absolutely essential that we automate every function we can," he says. ASAP Software does about 25 percent of its business via its website. Without such tight integration between the company's website and its back-end systems, a clerk would have had to print out every order and reenter it-- a horribly inefficient process.

Lewandowski thinks his business has more in common with Streamline than many people realize. A perishable goods merchant's success lies in drawing lots of customers, so that it can turn inventory quickly. Likewise, in order to survive and even flourish, ASAP has to sell as many units as it can as quickly as it can. "We are the grocery store of the software industry," Lewandowski says. For ASAP, real-time inventory means being able to use fewer employees while still assuring greater customer satisfaction. It has lower overhead and can pass those savings online to customers, while at the same time giving them better service-thus making it more likely that customers will return or recommend the company to others.

It Ain't Easy Being Real-Time

Today's real-time inventory started out in the 1980s as so-called "available to promise" technology, software that let order management reps field inventory questions in call centers. It was a very basic tool and could give only rough inventory availability information, such as whether a particular item was in stock or how many of that item had been ordered. Since

then, more sophisticated tools have been developed to allow supply chain optimization and intricate data analysis, such as being able to measure by product the speed that inventory turns over or the accuracy of inventory information. Other software, such as a combination of supply chain execution, optimization and visibility tools, can track the manufacture, movement, purchase and storage of goods, and integrate that information with an inventory system to give a view of what products are in the pipeline. "But the deployment has been slowed by back- and front-office integration [difficulties]," says Gartner's Cecere.

The Internet-the very thing that has made it possible to extend live inventory information out to the customer-has also made real-time inventory harder to do, Cecere says. Companies now get orders in many different ways-phone, websites, e-mail, fax or in-person at brick-and-mortar stores-making it harder to ensure that inventory information is accurate. And integrating transactions across all these channels is not just a matter of networking a bunch of computers, even if a company starts from scratch with brand-new technology and does not need to link a legacy database to a state-of-the-art system.

First, there's the very nonvirtual problem of how to tell the inventory system what items the warehouse has on hand in real-time. Typically that means physically scanning items as they enter the warehouse, with fixed or handheld scanners that communicate with the warehouse inventory system via radio frequency. The warehouse system, which monitors operations in that particular warehouse, then has to be linked to the master inventory system, which keeps track of inventory in all warehouses or from all suppliers.

Once that is done, the company has to address the question of latency-that is, how soon after information is entered into one part of the system does it get disseminated to other databases throughout the system and to the customer? Let's say there are just two widgets left in the warehouse and three people each order one within minutes of each other. Does the last person find out right then that all the widgets have been taken before the customer completes his or her order? Or does the customer not find out until the order doesn't arrive? Also, the company must decide how to deal with "browsers," customers who put things into their shopping carts and then leave the site without completing the order Should inventory be set aside for browsers when they put items in their shopping carts or only when they actually pay? (See "Know When to Hold 'Em," above.)

At the same time, the company has to handle what are known as semantics issues. For example, what does something as simple as "one" mean in each step of the fulfillment process? When an item comes into the warehouse, one may mean one case or one gross, but by the time it gets to the ordering process it may mean one package or one item. Defining this correctly is the difference between shipping a customer one widget and shipping a customer 144 of them. While a lot of middleware on the market can handle this kind of translation, getting it up and running is usually a slow, difficult task.

High Complexity, High Cost

Here's how the real-time inventory system works at ASAP: The company's customdeveloped order management and inventory management system runs on an HP 3000. Within 15 minutes of when new inventory arrives in the warehouse, the inventory database is updated. Product descriptions and SKU numbers are replicated from this system to a Microsoft SQL Server database, which Web customers can search; hitting the SQL database is faster than going back to the HP 3000 every time a customer wants to find a product. The product description and SKU information is replicated as a batch job every hour (information on specific products can be updated more quickly, if needed). But when the customer chooses a product, the website makes a real-time call to the HP 3000 to check pricing, since the company centrally manages its pricing rules. And when the customer specifies the number of items he or she wants to order, the website makes a real-time call to the HP 3000 to check if the product is in stock. If the product is not in stock, the customer is told that the product may not be available and is given an estimate of when more stock is expected in the warehouse. The real-time calls are made using middleware in OrderChannel, Web-based e-commerce software developed by FioravantiInternational. The product is not reserved in inventory until the customer commits to the order.

As one might guess, this type of integration doesn't come cheap. The cost of developing a real-time inventory management system and linking it to a website depends on the complexity of the business's operation. But Cecere says even a basic system, which just provides middleware between a website and an existing inventory system, can run $500,000 to $1 million for software and system integration services.

Money is not the only hurdle stopping companies from going real-time. Decoratetoday.com, which sells wallpaper, blinds and other home decorations via an 800 number and a website, relies on other companies for manufacturing and distribution. So its website can only give customers information as good as the company gets from its suppliers and distributors, which typically don't have realtime inventory capability.

How has Decoratetoday.com managed to sell a selection of 300,000 products from 45 manufacturers, process more than 800,000 transactions and ship more than 2.5 million packages each year without real-time inventory? Katzman says Decoratetoday.com "will not sell any product from any manufacturer that...cannot guarantee to us that it will be available to ship within 10 business days." Its product database is updated several times a day, with some manufacturers faxing · updates and others using e-mail. Those updates let the company know which items are in stock, which are back-ordered and which are no longer available.

Doing things this way takes a lot of legalese and long hours. Decoratetoday.com has penalties written into its suppliers' contracts if they fail to deliver on time. The company also puts a lot of effort into confirming and checking customers' orders both electronically and, with suppliers who aren't tied into the net, by phone or fax. Katzman believes this process has been successful at keeping customers happy, given that 60 percent of business is from repeat customers and 25 percent is from referrals. But it is extremely labor intensive.

Such labor-intensive processes have a cost. And analysts and vendors say that when deciding whether it pays to offer real-time inventory information on the Web, it's important to consider the costs-and the potential savings from improved integration. ASAP's Lewandowski says online orders take about 20 percent less time to process than offline orders, and that online orders also result in 5 percent direct labor cost savings.

Despite the potential savings, many observers believe competition will be what gets most companies to adopt real-time inventory. When one company in an e-commerce sector adopts it, other companies have to adopt it so that they aren't at a competitive disadvantage or they can get a competitive edge. True, the need for real-time varies somewhat by industry. The financial industry has had to be on the leading edge of real-time architectures-both because an hour can make a huge difference in their bottom line and because moving data around electronically is their business. Companies dealing with manufactured goods and retail sales have had more leeway when it comes to implementing real-time inventory systems. But according to a Jupiter Communications survey of e-commerce executives earlier this year, 40 percent of those surveyed plan to integrate their websites with their inventory systems in the next 12 to 18 months. About the same number say they plan to integrate their websites with their fulfillment and other back-end systems.

Beyond just "keeping up with the Joneses," companies will be compelled to roll out realtime inventory capability to improve customer satisfaction. A company's website is where many customers have their first contact with the business, so everything about how the site operates-from a link not working to an order for a pair of blue jeans not being fulfilled-reflects on the company. Everything is exposed online for the customer to see, and there's no sales rep to act as a filter. Or, as Lewandowski puts it, "Our kimono is now wide open to the customer."

[Sidebar]
Know When to Hold 'Em

[Sidebar]
Companies have to decide when to reserve inventory for customers-and when to risk disappointing them

[Sidebar]
ONE OF THE KEY DECISIONS to be made when linking a website to a real-time inventory system is at what point does a theoretical order become a real one? Shoppers often come to a website, place things in their

[Sidebar]
shopping basket and then leave without either logging off or ordering. Given the high rates of shopping-cart abandonment, should an item be reserved in the warehouse every time someone tells a webpage he wants something?
Many companies don't think so, preferring to wait to reserve goods until after customers put their money down, says Lora Cecere, research director for

[Sidebar] ·
enterprise and supply chain management at the Gartner Group in Stamford, Conn. Completing an order and checking out puts an item on hold in the inventory management database and prevents other people from ordering it. This may be good for the company, since it doesn't tie up inventory unneces

[Sidebar]
sarily. But it is problematic for the customer who takes a little too long to complete an order and gets to the checkout only to find an item that was in stock is now out of stock.

[Sidebar]
To avoid disappointing customers, some companies hold inventory when the customer puts it in the shopping cart, and then cancel it if the customer leaves the website without paying. Different cancellation rules can be set up for different customers. Victoria's

Secret's website saves registered shoppers' carts for at least two days; anonymous shoppers' carts are saved for varying lengths of time, depending on how much space is left in the database and how long the cart has been abandoned. -C. von Hoffman

[Author Affiliation]
Does your website tell customers the truth about inventory? Tell Senior Editor Sari Kalin at skalin@cio.com. Constantine von Hoffman is a freelance writer in Boston.

Text-only interface

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Real-time Web shopping
Charles Waltner. **InformationWeek**. Manhasset: Jul 28, 1997., Iss. 641; pg. 60, 3 pgs

Subjects:	Retail stores, Sporting goods, Electronic commerce, Online transaction processing, Customer services, Real time , Middleware, Case studies
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Abstract (Article Summary)

Recreational Equipment Inc. (REI) is tapping into WebSpeed, an application middleware product from Progress Software Corp. WebSpeed will let REI respond to online customers in real time by linking its Web site directly to its existing corporate back-office order-processing system. The technology will let the site respond to customers nearly as dynamically as a store clerk or mail-order representative. By using WebSpeed to tie its Web site to its order-processing system, REI hopes to provide dynamic, nearly instantaneous responses to almost any aspect of a customer's order, including inventory availability, credit-card approval, product reservations, shipping information, gift-card orders, and tax calculations. REI manager Matt Hyde says WebSpeed will help REI's Web store provide online shoppers with the same high-quality customer service they enjoy from the rest of the organization.

Full Text (1445 words)

[Headnote]
Retailer REI uses WebSpeed middleware to link its Web site to its order-processing system

Matt Hyde, manager of Recreational Equipment Inc.'s nine-month-old online store, had one misgiving about the Internet retail service: the lack of real-time interaction with customers.

But now, the Seattle retailer is tapping into WebSpeed, an application middleware product from Progress Software Corp. in Bedford, Mass. WebSpeed will let REI respond to online customers in real time by linking its Web site (www.rei. com) directly to its existing corporate back-office order-processing system. The technology will let the site respond to customers nearly as dynamically as a store clerk or mail-order service representative. "WebSpeed reduces processing costs, but that's not the compelling reason for going with it," Hyde says. "The compelling reason is customer service."

Big World

REI is one of the largest outdoor retailers in the world, with more than 50 stores throughout the United States and revenue of $484 million last year. REI was formed as a cooperative in 1938 and now has over 1.4 million active members, in addition to the thousands of nonmembers who shop at its stores and order from its international mailorder catalog every year.

By using WebSpeed to tie its Web site to its order-processing system, REI hopes to provide dynamic, nearly instantaneous responses to almost any aspect of a customer's order, including inventory availability, creditcard approval, product

reservations, shipping information, gift-card orders, and tax calculations.

REI is bringing these features online throughout the summer. Hyde says WebSpeed will help REI's Web store provide online shoppers with the same high-quality customer service they enjoy from the rest of the organization.

WebSpeed is an application-transaction middleware tool that serves as a "translator" between the HTML code generated at a Web site and the language of corporate transaction systems. It is robust enough to handle the complexity and high volumes associated with critical back-office applications. The software automatically processes HTML queries and requests sent by Website shoppers, much like a customer-service rep would enter information from a customer calling in an order over the telephone.

WebSpeed uses a "messenger" to transfer data between the Web server and WebSpeed's "transaction agents," which perform database transactions and translations between HTML and the back-office order-processing system. WebSpeed's "transaction broker" manages the pool of transaction agents for the most efficient use of computing resources.

By automating the entry of orders from the Web site into REI's legacy order-processing system, WebSpeed also unifies the Web site with the corporate network and eliminates the headaches and inefficiencies of operating two separate networks.

Ed Acly, director of middleware research at International Data Corp., a market research firm in Framingham, Mass., says REI's use of WebSpeed leads merchants and other companies striving to create intelligent electronic-commerce interfaces. WebSpeed is one of the first commercial products to bring the power of legacy systems to the Internet, he adds. Products such as WebSpeed have the potential to radically boost the interactive capabilities of the medium. "One of my premises from day one has been that to do serious transactions on the Internet, you need middleware," Acly says.

Enlarge 200%
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[Photograph]
Meeting needs: REI wants to let its online store conduct real-time transactions. says Day (left) and McLeod.

Hyde describes his goals for the Internet store as "any time, any place, any product, any questions." The intrinsic nature of the Internet takes care of the first two goalsallowing for shopping at any time and from any location.

The Internet's limitless information- capacity also helps with "any product." The REI Web store already lists 4,000 items and will offer the company's entire 6,000-product inventory by year's end. The largest REI print catalog contains only 600 items, and REI's 80,000-squarefoot flagship store is the only location with room for all the company's products. WebSpeed helps complete the last of Hyde's goals by providing realtime information to answer any question.

While REI would not estimate the cost of implementing WebSpeed, WebSpeed Workshop, a development tool kit, costs $500 per developer. And the WebSpeed Transaction Server, which manages the exchange of information between a Web site and back-office systems, starts at $23,000. The first iteration of the Web store ran "well into six figures," Hyde says.

WebSpeed should be worth the investment. According to Progressive, the REI online store receives at least 70 orders a day. Hyde would not confirm those figures, but says the site is making money and is receiving much more than 100 orders a week. Sales at the online store from April to May jumped 44%, he adds. The company has enjoyed similar increases in previous months, significantly outpacing growth at any other store in the organization. "It's my sense that the Web site will become the organization's biggest store," Hyde says.

But implementing WebSpeed has been no small undertaking. One reason REI chose to go with WebSpeed is because it's

rebuilding the order-processing infrastructure with Progress' fourth-generation development language and application server. The current order-processing system runs homegrown software on an Amdahl 5995 mainframe. The Progress-based system will run with an Oracle database on a client-server architecture based on IBM's RS/6000 Unix boxes.

Freed Up

Ralph Day, a systems development manager at REI and head of the team that researched a solution for the back-office link with the Web site, says using the same programming language on both the Web site and corporate network will help REI save money in the long run. It will free REI from having to expend time and resources keeping up to date on two technologies, he adds.

Also, because Progress uses object-oriented programming for its products, REI is building a pool of reusable business rules encapsulated in objects that can be applied to either WebSpeed or the new orderprocessing system. "It helps if you choose something that will allow you to write all the applications for your corporate computing needs, not just for Web apps," Day says.

Once REI settles into WebSpeed and its real-time transaction link to order processing, the company will consider replacing Netscape Communications' Merchant Server running its Web site's interface with an interface based wholly on WebSpeed. The move would provide for even greater interactive capabilities, such as letting customers personalize Web pages to meet their specific shopping needs, explains Rod McLeod, VP of IS at REI. The company also plans to add other features to further boost the dynamic interactivity and information available from the site (see story below).
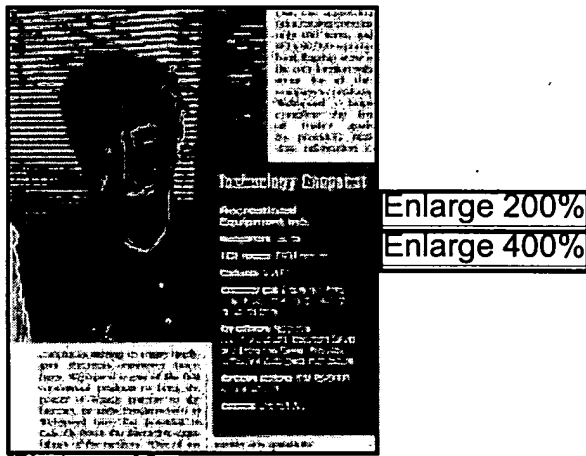
[Photograph]
Technology Snapshot

REI launched its site using Netscape's Merchant Server suite and the Netscape Enterprise Server. But as REI soon realized, Merchant Server works well for designing storefronts, but provides few capabilities for interactive transactions. "It pretty much stops there," McLeod says. "Customers weren't getting that real-time acknowledgement that they get from calling customer-service reps."

The Merchant Server translates HTML code into flat files for an Oracle database that comes with the software, but the server product provides no way to link a site with a corporate legacy system for customer-service order applications, McLeod explains. Merchant Server's database operates independently of REI's corporate system. So the Merchant Server, unlike WebSpeed, did not provide a way to create a dynamic, real-time connection to REI's back-office system.

To process an order from the Web site using Netscape's Merchant Server, REI had to download orders into the order-processing system each night, using an ad hoc batchprocessing program written in C++. Once the orders were in the system, a staff person had to manually write an E-mail response to confirm customers' Internet orders. Because of this process, customers would not find out about the status of their orders until a day or two later.

Solving Problems

Hyde knew that the rapidly increasing order volume from the Web store would eventually make any manual processing

impractical. He also realized the online store would benefit from a product such as WebSpeed, which eliminates many of the common ordering problems encountered on the Internet.

Bill Bass, an analyst at Forrester Research in Cambridge, Mass., agrees. He notes that real-time, automated responses to Internet orders help improve, inventory management and provide customers with immediate satisfaction. "It would be a customer-irritation problem if the site did not notify someone about an out-of-stock item until two days after an order," Bass says.

Bass adds that most traditional retailers with Web sites have not yet linked their back-office systems to their electronic storefronts, mainly because of costs. It can cost a company a few hundred thousand to several million dollars to reengineer legacy systems so they can smoothly integrate with Internet operations, he says.

Sound like a lot? Maybe not. These expenses, Bass says, can pay off big time if a site has enough volume. That's just what REI is shopping for.

Text-only interface

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